Journal of Physics: Conference Series 2011 vol.324 N1

Gaussian fluctuations in an ideal bose-gas - A simple model

Petrova A., Nedopekin O., Tayurskii D., Wang Q.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Based on the canonical ensemble, we suggested the simple scheme for taking into account Gaussian fluctuations in a finite system of ideal boson gas. Within framework of scheme we investigated the influence of fluctuations on the particle distribution in Bose -gas for two cases - with taking into account the number of particles in the ground state and without this assumption. The temperature and fluctuation parameter dependences of the modified Bose-Einstein distribution have been determined. Also the dependence of the condensation temperature on the fluctuation distribution parameter has been obtained.

http://dx.doi.org/10.1088/1742-6596/324/1/012032